

REMARKS

The foregoing amendment is responsive to the Office Action mailed on July 21, 2006. Claims 1-9 are pending in this application. By the foregoing amendment, it is submitted that claims 1-9 are in condition for allowance and requests such an allowance. Thus, Claims 1-9 are presented for examination by the examiner.

Discussion of the Office Action

In the Office Action of July 21, 2006, the Examiner rejected claims 1-9 under 35 U.S.C. §102(b) and §103 (a).

Discussion of Rejection of Claims 1-9 under 35 U.S.C. §102

Claims 1-9 stand rejected under 35 U.S.C. §102 as being anticipated by US Patent 5,604,048 issued to Nishihara (hereinafter "Nishihara"). According to the examiner "Nishihara teaches a fuel cell with a solid electrolyte and an electrode with a plurality of pores with an average diameter of 1-5 microns. (Abstract, col. 1 and col. 4). In one example, tapered pores are formed in the electrode where the average pore diameter on one side of the electrode is 1.92 microns and 2.11 microns on the other side (col. 25). Since the two pore diameters are within 10% of each other, then 90% of the pore volume is within a 10% band of the mode pore volume."

Applicants' claims express "...pores are tapered having a first pore opening smaller in size than a second pore opening..." and do not read on pores of different average pore sizes such as pores disclosed in Nishihara of average pore diameter of 1.92 microns and 2.11 microns. Two different average pore sizes disclosed in Nishihara do not disclose or suggest pores that are tapered as claimed by Applicants. Progressively changing pore sizes across a surface are not tapered pores. Furthermore, Nishihara does not include any enabling disclosure as to how to

prepare pores having different opening sizes that are tapered as claimed by Applicants. Accordingly, the anticipation rejection should be withdrawn.

Discussion of Rejection of Claims 1-9 under 35 U.S.C. §103

Claims 1-9 stand rejected under 35 U.S.C. §103 as being unpatentable over US Patent 5,114,803 issued to Ishihara (hereinafter "Ishihara")

Applicants' presently claimed invention includes a fuel cell having a solid electrolyte and electrodes containing pores that are tapered (with openings as described above). Apparently the examiner recognized the nature of Applicants' tapered pores in the Office Action dated June 9, 2005, page 3, line 9, where, according to the examiner, the Ishihara reference discloses Applicants' claimed fuel cell except for a disclosure of tapered pores. However, presently the examiner has now cited that the Ishihara reference discloses tapered pores in a fuel cell. In Applicants' opinion, the examiner has strained the Ishihara reference in an attempt to show that the electrode of Ishihara creates tapered pores. The examiner cites on page 4, lines 14-16, "...the pore diameter of the electrode varies to progressively change from one surface of the electrode to the other surface, thereby creating a tapered pore (citing col. 4, lines 53-55)." However, progressively changed pore sizes across a surface are not tapered pores. Ishihara does not disclose or suggest a fuel cell having a solid electrolyte in which the pores are tapered having a first pore opening smaller in size than a second pore opening. Furthermore, nowhere in Ishihara is it disclosed or suggested how to generate a tapered pore in the groups of pore sizes disclosed in Ishihara.

The Ishihara reference discloses detailed methods of firing electrode compositions to produce different groups of pores sizes by utilizing different particle diameters and different firing temperatures (such as approximately 1400 C. in sintering atmospheres) for each pore size achieved, and additional firing of solid electrolyte compositions (such as YSZ) onto the electrodes (See Ishihara, for instance, in col. 4, line 56-col. 6, line 16, as well as throughout the reference). But, nowhere in Ishihara is it disclosed or suggested that the Ishihara electrolytes

have tapered pores, i.e., that their pores have a first pore opening smaller in size than a second pore opening.

Nowhere in Ishihara is it disclosed or suggested as to how or why to taper pores in the presence of a solid electrolyte. It is not readily apparent how such a method would enable one of ordinary skill in the art to generate tapered pores with Ishihara's methods of firing compositions.

No prima facie case of obviousness can be established by such an inappropriate application of Ishihara. There is no teaching in the Ishihara reference disclosing tapering pores in a solid electrolyte fuel that would motivate one of ordinary skill in the art to taper the pores in Ishihara's fuel cell, or how to do it. The skilled artisan would not look to Ishihara to taper pores. Accordingly, the rejection for obviousness in view of the cited references should be withdrawn.

In the event that the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, he is respectfully requested to initiate the same with the undersigned at (925) 422-7820.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Alan H. Thompson', written over a horizontal line.

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